

## **Generation of low-frequency component of broadband electrostatic noise in the Earth's magnetosphere**

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Broadband electrostatic noise (BEN) is commonly observed in the Earth's magnetosphere, and has a frequency range from  $\sim 10$  Hz up to the local electron plasma frequency ( $\sim 10$  kHz and beyond). The high and low frequency components of BEN appear to be two different wave modes. The high frequency part is explained by electrostatic impulsive solitary waves whereas low-frequency part is not very well understood. Linear theory of low frequency waves is developed in a four-component magnetized plasma consisting of two types of electrons, namely cold electron beam and background plasma electrons and two types of ions, i.e., cold and hot ions with Boltzmann distribution. The model is applied to explain some features of the low-frequency component of the broadband electrostatic noise observed in the Earth's magnetotail.